

One Small Step for a Supervisor; One Frustrating Leap for a Student

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Just like our beloved group members, methods in organic synthesis are often put to extremes when faced with the complexity of natural products. This claim holds true at all stages of a total synthesis. It is true whether a key building block is being constructed, a key coupling step is being optimized, or a key transformation is being developed. It is also true whether you are working with a “traditional” natural product, the primary components of a cell, or a medicinal lead compound.

As supervisors, we often deem methods “good” on the basis of several interrelated criteria. The choice of words may differ from peer to peer and project to project: practicality, efficiency, scalability; solvent, reagent, time economy; chemo-, regio-, stereoselectivity; atom, redox, protecting-group economy; substrate-to-substrate, reagent stoichiometry; library versatility; chemical diversity; biosynthetic, biomimetic reality; bio-orthogonality, bio-compatibility; energy, environmental impact.

Whilst our groups diligently try to balance such ideals within an ever-evolving multistep synthesis, we are fully aware that elegance on paper does not always translate to operational ease on the bench. We are also, often frustratingly, aware that synthetic methods are not always ideal to advanced multi-functionalized substrates. Herein, several total and analogue syntheses from our group will be presented; the “good”, the “bad” and, perhaps, the “ugly”.

